C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.124.a.1 ATF Critical Device - 1 Tests

OPM Procedures in which this Attachment is used.		
4.120.124		

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Approved: _____***Signature on File***_____ _____
Physics Department Chair Date

V. Castillo

4.120.124.a.1 ATF Critical Device - 1 Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:_____ Checksum: _____

Division B Software Filename and Checksum: Title:_____ Checksum: _____

Initial testing complete:

Test Team Leader's Name (Print): _____ Life Number: _____

Test Team Leader's Name (Sign): _____ Date: _____/_____/_____

Acceptance test procedure complete (following repairs and retesting if required):

Test Team Leader's Name (Print): _____ Life Number:_____

Test Team Leader's Name (Sign): _____ Date: _____/_____/_____

Test results reviewed by:

Safety Section Head's Name (Print):_____ Life Number: _____

Safety Section Head's Name (Sign):_____ Date: _____/_____/_____

Test results accepted by Radiation Safety Committee:

RSC Member's Name (Print):_____ Life Number: _____

RSC Member's Name (Sign):_____ Date: _____/_____/_____

1.1 Test for conditions required for Beamline Shutter (BS) to be in Open position

□	**VERIFY**	**BS** is	**CLOSED**
□	**VERIFY**	Attempt to **open BS** in ATF Control Room **(ACR)**	**FAIL**
□	**VERIFY**	**User interlock,** encl **5809** Connr **P9,** Pins 1&2 Shorted	**OK**
□	**VERIFY**	Attempt to **open BS** in ATF Control Room **(ACR)**	**FAIL**
	SWEEP	Experimental Hall **(EH)**	
□	**VERIFY**	**EH** is	**SWEPT**
□	**VERIFY**	Attempt to **open BS** in ATF Control Room **(ACR)** encl **5811**	**FAIL**
	INSERT	**ACR** Permit **#1** Key **#25** in switch in **ACR** encl **5811**and **capture**	
□	**VERIFY**	Attempt to **open BS** in ATF Control Room **(ACR)**	**FAIL**
	INSERT	**ACR** Permit **#2** Key **#26** in switch in **ACR** encl **5811**and **capture**	
□	**VERIFY**	Attempt to **open BS** in ATF Control Room **(ACR)**	**FAIL**
	INSERT	Beam Line Lock Out **(BLLO) left** key **#28** in switch in encl **5809** and **capture**	
□	**VERIFY**	**BS** enable light at encl **5811**	**ON**
□	**VERIFY**	Attempt to **open BS** in ATF Control Room **(ACR)**	**SUCCESSFUL**
	CLOSE	**BS** at encl **5811** in **ACR**	
□	**VERIFY**	**BS**	**CLOSED**
	OPEN	**BS** at encl **5811** in **ACR**	
□	**VERIFY**	**BS**	**OPEN**
	TURN	Door **A** release at encl **5811** in **ACR**	
□	**VERIFY**	**BS**	**CLOSED**
□	**VERIFY**	**RIA** □ and **RIB** □	**TRIP**
	RESTORE	Door **A** release	
	RESET	**RIA** with **SOR** key and RIA **Reset**	
□	**VERIFY**	**RIA**	**RESET**
	OPEN	**BS**	
□	**VERIFY**	**BS**	**OPEN**
□	**VERIFY**	Attempt to **Reset RIB** with **SOR key** and **RIB** Reset	**FAIL**
	INSERT	Beam Line Lock Out **(BLLO) right** key **#27** in switch in encl **5809** and **capture**	
□	**VERIFY**	Attempt to **Reset RIB** with **SOR key** and **RIB** Reset	**FAIL**
□	**VERIFY**	At encl 5809 **RIBL** light is	**OFF**
	TURN	**RIB Test** key in encl **5809**	
□	**VERIFY**	At encl 5809 **RIBL** light is	**ON**
□	**VERIFY**	Attempt to **Reset RIB** with **SOR key** and **RIB** Reset	**SUCCESSFUL**
	TURN	Door **B** release at encl **5811** in **ACR**	
□	**VERIFY**	**BS**	**CLOSED**
□	**VERIFY**	**RIA**	**TRIP**
	RESTORE	Door **B** release	
	RESET	**RIA** with **SOR** key and RIA **Reset**	
□	**VERIFY**	**RIA**	**RESET**
	OPEN	**BS**	
□	**VERIFY**	**BS**	**OPEN**
	TURN	**Permit #1** key at encl **5811** in **ACR**	
□	**VERIFY**	**BS**	**CLOSED**
□	**VERIFY**	**RIA**	**TRIP**
	RESTORE	**Permit #1** key	
	RESET	**RIA** with **SOR** key and RIA **Reset**	

☐	**VERIFY**	**RIA**	**RESET**
	OPEN	**BS**	
☐	**VERIFY**	**BS**	**OPEN**
	TURN	**Permit #2** key at encl **5811** in **ACR**	
☐	**VERIFY**	**BS**	**CLOSED**
☐	**VERIFY**	**RIA**	**TRIP**
	RESTORE	**Permit #2** key	
	RESET	**RIA** with **SOR** key and RIA **Reset**	
☐	**VERIFY**	**RIA**	**RESET**
	OPEN	**BS**	
☐	**VERIFY**	**BS**	**OPEN**
	TURN	Left **BLLO** key at encl **5809**	
☐	**VERIFY**	**BS**	**CLOSED**
☐	**VERIFY**	**RIA**	**TRIP**
	RESTORE	Left **BLLO** key	
	RESET	**RIA** with **SOR** key and RIA **Reset**	
☐	**VERIFY**	**RIA**	**RESET**
	OPEN	**BS**	
☐	**VERIFY**	**BS**	**OPEN**
☐	**VERIFY**	**Attempt** to open Door **A** with **Keypad**	**UNSUCCESSFUL**
	OPEN	Double Door **C** with **ATF 15** key	
☐	**VERIFY**	**EH** Sweep	**DROPS**
☐	**VERIFY**	**BS**	**CLOSED**
☐	**VERIFY**	**Attempt** to open Door **A** with **Keypad**	**SUCCESSFUL**

☐ **Check for acceptance of Test for conditions required for Beamline Shutter (BS) to be in Open position**

1.2 Test to verify conditions for Modulators to be Enabled ON

□	**VERIFY**	**1KW Linac** □ and **Gun** □ Amplifiers	**LOTO**
	REMOVE	**LOTO** from **Modulators 1 & 2** (**Mod 1** □ & **Mod 2** □)	
□	**VERIFY**	**Mod 1** □ & **Mod 2** □ are	**NO LOTO**
□	**VERIFY**	**Mod1** □ & **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**FAIL**
□	**VERIFY**	**EH** is	**NOT SWEPT**
□	**VERIFY**	**BS** is	**CLOSED**
	SWEEP	**Linac** tunnel	
□	**VERIFY**	**Linac** tunnel is	**SWEPT**
□	**VERIFY**	MS **A** □ (right side) and MS **B** □ (left side)are	**CLOSED**
□	**VERIFY**	At Mezz. Encl **5812,** Mezz Interlock Box **(MIB): RIA** □**, RIB** □**,** Exptl Hall Interlock **(EHI) A** □**, EHI B** □**, RIA#1** □ and **RIB#2** □ are	**ON**
□	**VERIFY**	At encl **5813,** Mod1 Contactor Box **(M-1CB), RIA** □ and **RIB** □ are	**ON**
□	**VERIFY**	At encl **5814,** Mod2 Contactor Box **(M-2CB), RIA** □ and **RIB** □ are	**ON**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	SWEEP	**EH**	
□	**VERIFY**	**EH** is	**SWEPT**
	OPEN	**BS**	
□	**VERIFY**	**BS** is	**OPEN**
□	**VERIFY**	**Mod1** □ and **Mod2** □ are still	**ENABLED ON**
	OPEN	MS **A** at **Linac Plug Door**	
□	**VERIFY**	MS **A** is	**OPEN**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**OFF**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**OFF**
□	**VERIFY**	At encl 5813 **Mod1** □ and at encl 5814 **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	**Attempt** to **Enable On Mod1** □ and **Mod2** □	**FAIL**
	CLOSE	MS **A**	
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**ON**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**ON**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	OPEN	MS **B** at **Linac Plug Door**	
□	**VERIFY**	MS **B** is	**OPEN**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIB** □**, EHI B** □ and **RIB#2** □ are	**OFF**
□	**VERIFY**	At encl **5813, M-1CB, RIB** □ and encl **5814, M-2CB, RIB** □ are	**OFF**
□	**VERIFY**	At encl 5813 **Mod1** □ and at encl 5814 **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	**Attempt** to **Enable On Mod1** □ and **Mod2** □	**FAIL**
	CLOSE	MS **B**	
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIB** □**, EHI B** □ and **RIB#2** □ are	**ON**
□	**VERIFY**	At encl **5813, M-1CB, RIB** □ and encl **5814, M-2CB, RIB** □ are	**ON**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	OPEN	Door **A** of **EH** with release at **ACR** and **hold open**	
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**OFF**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**OFF**
□	**VERIFY**	**BS**	**CLOSED**

□	**VERIFY**	At encl 5813 **Mod1** □ and at encl 5814 **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	**Attempt** to **Enable On Mod1** □ and **Mod2** □	**FAIL**
	RESET	RIA at encl **5809** with **SOR** key	
□	**VERIFY**	**RIA** is	**RESET**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**ON**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**ON**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	CLOSE	Door **A** of **EH**	
□	**VERIFY**	Door **A** of **EH**	**CLOSED**
□	**VERIFY**	**Mod1** □ and **Mod2** □ are still	**ENABLED ON**
	DISABLE	**Mod1** □ and **Mod2** □	
□	**VERIFY**	**Mod1** □ and **Mod2** □ are	**ENABLED OFF**

□ **Check for acceptance of Test to verify conditions for Modulators to be Enabled ON**

1.3 Test of Incorrect Primary Critical Device Response with the ATF Chicane Magnet in the ON state and the Modulators 1 and 2 Turned On and Pulsing

□	**VERIFY**	**CMSK** is set to	**ON**
□	**VERIFY**	On Detls Pge **ACR** sees **Key SW ON**: Div **A** □ and Div **B** □	**ON**
□	**VERIFY**	**ACR** sees voltages for: **CM1** □**, CM2** □**, CM3** □ and **CM4** □ are	**0 ± .5 V**
	TURN ON	**Power Supply** for **Chicane Magnets** in **Run** mode	
□	**VERIFY**	**ACR** sees voltages for: **CM1** □**, CM2** □**, CM3** □ and **CM4** □ are	**~ 2.35 V**
□	**VERIFY**	**ACR** sees **CDEV_1**	**Enabled OUT**
□	**VERIFY**	**ACR** sees **RHK_DV1** □ and **RHK_DV2** □ are	**Enabled OFF**
□	**VERIFY**	**ACR** sees **Reachback**	**OK**
□	**VERIFY**	**ACR** sees on Detls pge **CDEV_1:** Div **A** □ and Div **B** □	**Enabled OUT**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Enabled OFF**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Enabled OFF**
□	**VERIFY**	Exp Hall **(EH)** □ and ATF Linac **(AL)** □ are	**SWEPT**
□	**VERIFY**	**Mod 1** □ and **Mod 2** □ **Arc Interlock Statuses (AIS)** are	**OK**
	TURN ON	**208V** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**208V** to **Mod 1** □ and **Mod 2** □ are	**ON**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Enabled ON**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Enabled ON**
	TURN ON	**HV** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**HV** to **Mod 1** □ and **Mod 2** □ are	**ON**
	P&H	At **encl 5805, ACMRA,** Div **A** S1 for **>10 secs**	
□	**VERIFY**	**ACR** sees on Detls pge **>10% Fault,** Div **A**	**FAULT**
□	**VERIFY**	**ACR** sees on Detls pge **CDEV_1:** Div **A**	**Disabled IN**
□	**VERIFY**	**ACR** sees on Detls pge **CDEV_1:** Div **B**	**Enabled IN**
	P&H	At **encl 5806, CIB,** Div **A** Laser Shutter **Test** button for **> 2secs**	
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Disabled OFF**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Enabled OFF**

□	**VERIFY**	**ACR** sees **Reachback** Div **A**	**Fault**
□	**VERIFY**	**Audio Alarm**	**OFF**
□	**VERIFY**	**Mod 1** □ and **Mod 2** □ are	**OFF**
□	**VERIFY**	**Mod 1** □ and **Mod 2** □ **AIS** are	**FAULT**
□	**VERIFY**	**Attempt** to **Turn On 208V** to **Mod 1** □ and **Mod 2** □	**FAIL**
□	**VERIFY**	**Attempt** to **Turn On HV** to **Mod 1** □ and **Mod 2** □	**FAIL**
□	**VERIFY**	**Attempt** to **Reset Mod 1** □ and **Mod 2** □ **Ready Light**	**OK**
□	**VERIFY**	**Attempt** to **Reset** >10% fault	**SUCCESSFUL**
□	**VERIFY**	**Attempt** to **Reset** Reachback	**SUCCESSFUL**
□	**VERIFY**	**ACR** sees on Detls pge **CDEV_1:** Div **A** □ and Div **B** □	**Enabled OUT**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Enabled OFF**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Enabled OFF**
□	**VERIFY**	**ACR** sees **CDEV_1**	**Enabled OUT**
□	**VERIFY**	**ACR** sees **RHK_DV1** □ and **RHK_DV2** □ are	**Enabled OFF**
	TURN ON	**208V** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**208V** to **Mod 1** □ and **Mod 2** □ are	**ON**
□	**VERIFY**	**Attempt** to **Reset Mod 1** □ and **Mod 2** □ **AIS**	**SUCCESSFUL**
□	**VERIFY**	**Mod 1** □ and **Mod 2** □ **AIS** are	**OK**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Enabled ON**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Enabled ON**
	TURN ON	**HV** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**HV** to **Mod 1** □ and **Mod 2** □ are	**ON**
	P&H	At **encl 5805, ACMRA,** Div **B** S2 for **>10 secs**	
□	**VERIFY**	**ACR** sees on Detls pge **>10% Fault,** Div **B**	**FAULT**
□	**VERIFY**	**ACR** sees on Detls pge **CDEV_1:** Div **A**	**Enabled IN**
□	**VERIFY**	**ACR** sees on Detls pge **CDEV_1:** Div **B**	**Disabled IN**
	P&H	At **encl 5806, CIB,** Div **B** Laser Shutter **Test** button for **> 2secs**	
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Enabled OFF**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Disabled OFF**
□	**VERIFY**	**ACR** sees **Reachback** Div **B**	**Fault**
□	**VERIFY**	**Audio Alarm**	**OFF**
□	**VERIFY**	**Mod 1** □ and **Mod 2** □ are	**OFF**
□	**VERIFY**	**Mod 1** □ and **Mod 2** □ **AIS** are	**FAULT**
□	**VERIFY**	**Attempt** to **Turn On 208V** to **Mod 1** □ and **Mod 2** □	**FAIL**
□	**VERIFY**	**Attempt** to **Turn On HV** to **Mod 1** □ and **Mod 2** □	**FAIL**
□	**VERIFY**	**Attempt** to **Reset Mod 1** □ and **Mod 2** □ **AIS**	**FAIL**
□	**VERIFY**	**Attempt** to **Reset** >10% fault	**SUCCESSFUL**
□	**VERIFY**	**Attempt** to **Reset** Reachback	**SUCCESSFUL**
□	**VERIFY**	**ACR** sees on Detls pge **CDEV_1:** Div **A** □ and Div **B** □	**Enabled OUT**

□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Enabled ON**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Enabled ON**
□	**VERIFY**	**ACR** sees **CDEV_1**	**Enabled OUT**
□	**VERIFY**	**ACR** sees **RHK_DV1** □ and **RHK_DV2** □ are	**Enabled ON**
□	**VERIFY**	**Attempt** to **Reset Mod 1** □ and **Mod 2** □ **AIS**	**SUCCESSFUL**
□	**VERIFY**	**Mod 1** □ and **Mod 2** □ **AIS** are	**OK**
	TURN ON	**208V** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**208V** to **Mod 1** □ and **Mod 2** □ are	**ON**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **A**	**Enabled ON**
□	**VERIFY**	**ACR** sees on Detls pge **RHK_DV1** □ and **RHK_DV2** □**,** Div **B**	**Enabled ON**
	TURN ON	**HV** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**HV** to **Mod 1** □ and **Mod 2** □ are	**ON**
	Turn OFF	**HV** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**HV** to **Mod 1** □ and **Mod 2** □ are	**OFF**
	Turn OFF	**208V** to **Mod 1** and **Mod 2**	
□	**VERIFY**	**208V** to **Mod 1** □ and **Mod 2** □ are	**OFF**

□ **Check for acceptance of Test of Div A Incorrect Primary Critical Device Response with the ATF Chicane Magnet in the ON state and the Modulators 1 and 2 turned On.**

1.4 Test interlocks will turn off Modulators while Turned ON and Pulsing

	LOTO	**1KW Linac** and **Gun** Amplifiers	
□	**VERIFY**	**1KW Linac** □ and **Gun** □ Amplifiers	**LOTO**
□	**VERIFY**	**LOTO** is removed from **Modulators 1 & 2 (Mod1** □ **& Mod2** □**)**	
□	**VERIFY**	**Mod1** □ & **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**FAIL**
□	**VERIFY**	**EH** is	**NOT SWEPT**
□	**VERIFY**	**BS** is	**CLOSED**
	SWEEP	**Linac** tunnel	
□	**VERIFY**	**Linac** tunnel is	**SWEPT**
□	**VERIFY**	MS **A** □ (right side) and MS **B** □ (left side)are	**CLOSED**
□	**VERIFY**	At Mezz. Encl **5812,** Mezz Interlock Box **(MIB): RIA** □**, RIB** □**,** Exptl Hall Interlock **(EHI) A** □**, EHI B** □**, RIA#1** □ and **RIB#2** □ are	**ON**
□	**VERIFY**	At encl **5813,** Mod1 Contactor Box **(M-1CB), RIA** □ and **RIB** □ are	**ON**
□	**VERIFY**	At encl **5813,** Mod2 Contactor Box **(M-2CB), RIA** □ and **RIB** □ are	**ON**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	SWEEP	**EH**	
□	**VERIFY**	**EH** is	**SWEPT**
	OPEN	**BS**	
□	**VERIFY**	**BS** is	**OPEN**
□	**VERIFY**	**Mod1** □ and **Mod2** □ are still	**ENABLED ON**
	TURN ON	**Low Voltage to Mod1**and **Mod2**	
□	**VERIFY**	**Low Voltage to Mod1** □ and **Mod2** □ are	**ON**
	TURN ON	**High Voltage to Mod1**and **Mod2**	

□	**VERIFY**	**High Voltage to Mod1** □ and **Mod2** □ are	**ON**
	OPEN	MS **A**	
□	**VERIFY**	MS **A** is	**OPEN**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**OFF**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**OFF**
□	**VERIFY**	**Mod1** □ and **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	High Voltage to **Mod1** □ and **Mod2** □ are	**OFF**
□	**VERIFY**	Low Voltage to **Mod1** □ and **Mod2** □ are	**OFF**
□	**VERIFY**	**Attempt** to turn on Low Voltage to **Mod1** □ and **Mod2** □	**FAIL**
□	**VERIFY**	**Attempt** to turn on High Voltage to **Mod1** □ and **Mod2** □	**FAIL**
	CLOSE	MS **A**	
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**ON**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**ON**
	RESET	**RIA** at encl **5813** and encl **5815**	
□	**VERIFY**	**RIA**	**RESET**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	TURN ON	**Low Voltage to Mod1**and **Mod2**	
□	**VERIFY**	**Low Voltage to Mod1** □ and **Mod2** □ are	**ON**
	TURN ON	**High Voltage to Mod1**and **Mod2**	
□	**VERIFY**	**High Voltage to Mod1** □ and **Mod2** □ are	**ON**
	OPEN	MS **B**	
□	**VERIFY**	MS **B** is	**OPEN**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIB** □**, EHI B** □ and **RIB#2** □ are	**OFF**
□	**VERIFY**	At encl **5813, M-1CB, RIB** □ and encl **5814, M-2CB, RIB** □ are	**OFF**
□	**VERIFY**	At encl **5813 RIA is**	**ON**
□	**VERIFY**	**Mod1** □ and **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	High Voltage to **Mod1** □ and **Mod2** □ are	**OFF**
□	**VERIFY**	Low Voltage to **Mod1** □ and **Mod2** □ are	**OFF**
□	**VERIFY**	**Attempt** to turn on Low Voltage to **Mod1** □ and **Mod2** □	**FAIL**
□	**VERIFY**	**Attempt** to turn on High Voltage to **Mod1** □ and **Mod2** □	**FAIL**
	CLOSE	MS **B**	
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIB** □**, EHI B** □ and **RIB#2** □ are	**ON**
□	**VERIFY**	At encl **5813, M-1CB, RIB** □ and encl **5814, M-2CB, RIB** □ are	**ON**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	TURN ON	**Low Voltage to Mod1**and **Mod2**	
□	**VERIFY**	**Low Voltage to Mod1** □ and **Mod2** □ are	**ON**
	TURN ON	**High Voltage to Mod1**and **Mod2**	
□	**VERIFY**	**High Voltage to Mod1** □ and **Mod2** □ are	**ON**
	PRESS	**ES** in **ACR**	
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**OFF**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIB** □**, EHI B** □ and **RIB#2** □ are	**OFF**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**OFF**
□	**VERIFY**	At encl **5813, M-1CB, RIB** □ and encl **5814, M-2CB, RIB** □ are	**OFF**
□	**VERIFY**	**BS**	**CLOSED**
□	**VERIFY**	**Mod1** □ and **Mod2** □ are	**ENABLED OFF**
□	**VERIFY**	High Voltage to **Mod1** □ and **Mod2** □ are	**OFF**
□	**VERIFY**	Low Voltage to **Mod1** □ and **Mod2** □ are	**OFF**

□	**VERIFY**	**Attempt** to turn on Low Voltage to **Mod1** □ and **Mod2** □	**FAIL**
□	**VERIFY**	**Attempt** to turn on High Voltage to **Mod1** □ and **Mod2** □	**FAIL**
	RESET	**ES** in **ACR**	
□	**VERIFY**	**ES** in **ACR** is	**RESET**
	RESET	RIA at encl **5809** with **SOR** key	
□	**VERIFY**	**RIA** at encl **5809** is	**RESET**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIA** □**, EHI A** □ and **RIA#1** □ are	**ON**
□	**VERIFY**	At encl **5813, M-1CB, RIA** □ and encl **5814, M-2CB, RIA** □ are	**ON**
	RESET	RIB at encl **5809** with **SOR** key and **Test RIB**	
□	**VERIFY**	**RIB** at encl **5809** is	**RESET**
□	**VERIFY**	At Mezz. Encl **5812, MIB: RIB** □**, EHI B** □ and **RIB#2** □ are	**ON**
□	**VERIFY**	At encl **5813, M-1CB, RIB** □ and encl **5814, M-2CB, RIB** □ are	**ON**
□	**VERIFY**	**Attempt** to Enable On **Mod1** □ and **Mod2** □	**SUCCESSFUL**
	DISABLE	**Mod1** □ and **Mod2** □	
□	**VERIFY**	**Mod1** □ and **Mod2** □ are	**ENABLED OFF**

□ **Check for acceptance of Test interlocks will turn off Modulators while Enabled ON and Pulsing**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: _____/____/_____

TTL: Sign for completion of final testing: _____

Date: _____/____/_____